

Education

May 2009	BA (Molecular Biology), with high honors, Kenyon College
May 2012	MSPH (Epidemiology), University of North Carolina at Chapel Hill Gillings School of Global Public Health (Thesis: Exposure to fogger trucks and breast cancer)
December 2015	PhD (Epidemiology), University of North Carolina at Chapel Hill Gillings School of Global Public Health (Dissertation: Long-term measures of PAH exposure, DNA methylation and breast cancer)

Brief Chronology of Employment

2015-2018	Post-doctoral research fellow, Chronic Disease Epidemiology, National Institute of Environmental Health Sciences, National Institute of Health, Research Triangle Park, NC
2019-date	Earl Stadtman Tenure Track Investigator, Environment and Cancer Epidemiology Group Head, Epidemiology Branch, Division of Intramural Research, National Institute of Environmental Health Sciences, Research Triangle Park, NC
2019-date	Adjunct Assistant Professor, Department of Epidemiology, University of North Carolina at Chapel Hill Gillings School of Global Public Health

Honors and Scientific Recognition

NIEHS Intramural Paper of the Month (White et al., 2016 Fert and Sterility), 2016
American Society for Preventative Oncology New Investigator Workshop, 2016
Delta Omega Honor Society, Theta Chapter, UNC-Chapel Hill, 2016
Epidemiology Branch Research Award: Polycyclic Organic Matter and Metallic Air Toxics in Association with Breast Density, 2017
NIEHS Intramural Paper of the Month (White and Sandler 2017 EHP), 2017
NIEHS Intramural Paper of the Month (White et al., 2019 IJE), 2019
1st place poster prize, Society for Epidemiology Research Annual Meeting, 2019
NIEHS Intramural Paper of the Month (Niehoff et al., 2019 Envr Int), 2019
NIEHS Intramural Paper of the Month (White et al., 2019 Envr Int), 2019
NIEHS Intramural Paper of the Month (White et al., 2019 EHP), 2019

Memberships

American Society for Preventative Oncology
Society for Epidemiologic Research

Research Interests

Environmental and lifestyle risk factors for breast cancer and other cancers, statistical methods for environmental mixtures, health consequences of exposure to air pollutants and metals, epigenetic markers for disease risk.

Funded Research Projects

Toenail metals and breast cancer risk: a prospective cohort study. This study will assess a panel of metals in prospective toenail samples and will evaluate metal mixtures in relation to breast cancer risk.

Role: PI

Funding Agency: Office of Women's Health Research

Amount: \$200,000

Current Trainees

Nicole Niehoff, PhD MSPH (IRTA Postdoctoral Fellow)

Mentoring Role: Primary Mentor

Allyson Gregoire, MPH (Research Assistant)

Mentoring role: Primary mentor

Marina Sweeney, MPH (Summer Student Fellow 2019, special)

Mentoring Role: Primary mentor for summer research project

Former Trainees

Carolyn Eberle, MPH (Summer Student Fellow 2018; Special Volunteer 2018-present).

Mentoring Role: Primary mentor for summer research project

Shahar Shmuel, MPH (Summer Student Fellow 2016)

Mentoring Role: Primary mentor for summer research project

Teaching Activities

University of North Carolina Gillings School of Global Public Health

EPID 715: Theory and Quantitative Methods in Epidemiology, Teaching Assistant, 2014

EPID 716: Epidemiologic Data Analysis, Teaching Assistant, 2014

EPID 770: Environmental Epidemiology, Guest Lecture, 2018

HBEH/HPM 765: Cancer Prevention and Control, Guest Lecture, 2019

EPID 799A: Epidemiology Seminar Series, Guest Speaker, 2019

Professional Activities

Co-president, UNC Epidemiology Alumni Society, 2016-2017

Abstract reviewer, International Society for Environmental Epidemiology, 2016-2019

Member, American Society for Preventative Oncology, Program Committee, 2018-2020

Abstract reviewer, Society for Epidemiologic Research, 2018

Co-chair, Mixtures Working Group, 2018-current

Women's Health Session Chair, Society for Epidemiologic Research Annual Meeting 2019

Reviewer for Journals (selected)

American Journal of Epidemiology

British Medical Journal

British Journal of Cancer
Breast Cancer Research
Cancer Causes and Control
Cancer Epidemiology, Biomarkers and Prevention
Carcinogenesis
Environment International
Environmental Research
Epigenetics
Journal of the National Cancer Institute
International Journal of Cancer

Committees and Workshops

Research on Cancer, Shift work and light at night monograph, internal review committee, 2018.

NIEHS Committees

Member, NIEHS National Trainee's Assembly Steering Committee, 2016-2017
Member, Biomedical Career Symposium Planning Committee, 2016
Member, Epidemiology Branch Retreat Planning Committee, 2016

Invited Presentations

2014

Indoor air pollution exposure from use of indoor stoves and fireplaces in association with breast cancer: a case-control study. Selected talk; Society for Epidemiologic Research Annual Meeting, Modifiable Risk Factors for Breast Cancer: Still Searching. Seattle, WA. June, 2014.

2015

Long-term PAH from multiple sources, DNA methylation and breast cancer risk. Invited talk; National Institute of Environmental Health Sciences, Research Triangle Park, NC. April 29th, 2015

Overall and central adiposity in the Sister Study. Selected talk; Society for Epidemiologic Research Annual Meeting, Diet, Energy Balance and Women's Health. Denver, CO. June, 2015.

2016

Tobacco Use and Indoor Air Pollution with Breast Cancer: Underlying Biologic Mechanisms. Invited talk; Environmental Epidemiology Seminar Series. University of North Carolina at Chapel Hill, Chapel Hill, NC. February 19th, 2016

Shift work, sleep patterns and light at night in association with breast cancer and DNA methylation in the prospective Sister Study cohort. Invited talk; New Investigator Workshop. American Society for Preventative Oncology Annual Meeting. Columbus, OH. March 13th, 2016.

Active tobacco smoke and environmental tobacco smoke exposure during potential biological windows of susceptibility in relation to breast cancer. Selected talk; American

Society for Preventative Oncology Annual Meeting, Tobacco Session. Columbus, OH. March, 2016. Abstract published in: *Cancer Epid Bio Prev* 25 (3) 562

Air toxics and breast density. Invited talk; Environmental Epidemiology Seminar Series. University of North Carolina at Chapel Hill, NC. December 2nd, 2016

2018

Up in the Air: The Relationship between Air Pollution and Breast Cancer Risk. Invited talk; Stadtman Candidate Seminar. National Institute of Environmental Health Sciences. Research Triangle Park, NC. January 24th, 2018

Up in the Air: The Relationship between Air Pollution and Breast Cancer Risk. Invited talk; Cancer Epidemiology Seminar Series. University of North Carolina at Chapel Hill, NC. February 2nd, 2018.

Airborne metals, breast density and breast cancer risk. Invited talk; Breast Cancer and Environment Spring Symposium. Duke University. March 9th, 2018.

2019

Air pollution, clustering of particulate matter components and breast cancer. Selected talk; American Society for Preventative Oncology Annual Meeting, Environmental and Molecular Exposures and the Cancer Spectrum. Tampa, FL. March 2019. Abstract published in: *Cancer Epid Bio Prev*

Air pollution, epigenetic age and breast cancer risk. Invited talk; Environmental Epidemiology Seminar Series. University of North Carolina at Chapel Hill. Chapel Hill, NC. April 2019.

Air pollution, epigenetic age and breast cancer risk. Invited talk; Chronic Disease Unit Columbia University, New York, NY. June 2019.

Air pollution, particulate matter composition and methylation-based biologic age. Selected talk; International Society for Environmental Epidemiology Annual Meeting, Air pollution and epigenetics. Utrecht, Netherlands. August 2019.

Hair dye and chemical straighteners in relation to breast cancer risk in a large US population of black and white women. Selected Talk; Breast Cancer and the Environment Research Program Annual Meeting. Atlanta, GA. November 2019.

Air pollution, DNA methylation-based biologic age and breast cancer. Invited talk; Epigenetic and Stem Cell Biology Branch. National Institute of Environmental Health Sciences. December, 2019.

Research Papers in Peer-reviewed Journals (^ denotes co-senior authorship, * denotes a trainee)

1. **White AJ**, Northcutt MJ, Rohrback SE, Carpenter RO, Niehaus-Sauter MM, Gao Y, Wheatly MG, Gillen CM. Characterization of sarcoplasmic calcium binding protein (SCP) variants from freshwater crayfish *Procambarus clarkii*. *Comp Biochem Physiol B Biochem Mol Biol*. 2011;160: 8-14.
2. **White AJ**, Reeve BB, Chen RC, Stover AM, Irwin DE. Urinary incontinence and health-related quality of life among older Americans with and without cancer: a cross-sectional study. *BMC Cancer*. 2013;13: 377. PMID:PMC3750543.
3. **White AJ**, Sandler DP, Bolick SC, Xu Z, Taylor JA, DeRoo LA. Recreational and household physical activity at different time points and DNA global methylation. *Eur J Cancer*. 2013;49: 2199-2206. PMID:PMC3686968.
4. **White AJ**, Teitelbaum SL, Wolff MS, Stellman SD, Neugut AI, Gammon MD. Exposure to fogger trucks and breast cancer incidence in the Long Island Breast Cancer Study Project: a case-control study. *Environ Health*. 2013;12: 24. PMID:PMC3639887.
5. **White AJ**, Reeve BB, Chen RC, Stover AM, Irwin DE. Coexistence of urinary incontinence and major depressive disorder with health-related quality of life in older Americans with and without cancer. *J Cancer Surviv*. 2014;8: 497-507. PMID:PMC4127347.
6. **White AJ**, Teitelbaum SL, Stellman SD, Beyea J, Steck SE, Mordukhovich I, McCarty KM, Ahn J, Rossner P, Jr., Santella RM, Gammon MD. Indoor air pollution exposure from use of indoor stoves and fireplaces in association with breast cancer: a case-control study. *Environ Health*. 2014;13: 108. PMID:PMC4320487.
7. McCullough LE, Chen J, **White AJ**, Xu X, Cho YH, Bradshaw PT, Eng SM, Teitelbaum SL, Terry MB, Garbowski G, Neugut AI, Hibshoosh H, Santella RM, Gammon MD. Gene-Specific Promoter Methylation Status in Hormone-Receptor-Positive Breast Cancer Associates with Postmenopausal Body Size and Recreational Physical Activity. *Int J Cancer Clin Res*. 2015;2. PMID:PMC4440485.
8. McCullough LE, Chen J, **White AJ**, Xu X, Cho YH, Bradshaw PT, Eng SM, Teitelbaum SL, Terry MB, Garbowski G, Neugut AI, Hibshoosh H, Santella RM, Gammon MD. Global DNA Methylation, Measured by the Luminometric Methylation Assay (LUMA), Associates with Postmenopausal Breast Cancer in Non-Obese and Physically Active Women. *J Cancer*. 2015;6: 548-554. PMID:PMC4439941.
9. **White AJ**, Chen J, McCullough LE, Xu X, Cho YH, Teitelbaum SL, Neugut AI, Terry MB, Hibshoosh H, Santella RM, Gammon MD. Polycyclic aromatic hydrocarbon (PAH)-DNA adducts and breast cancer: modification by gene promoter methylation in a population-based study. *Cancer Causes Control*. 2015;26: 1791-1802. PMID:PMC4763714.
10. **White AJ**, Nichols HB, Bradshaw PT, Sandler DP. Overall and central adiposity and breast cancer risk in the Sister Study. *Cancer*. 2015;121: 3700-3708. PMID:PMC4592412.
11. McCullough LE, Chen J, Cho YH, Khankari NK, Bradshaw PT, **White AJ**, Garbowski G, Teitelbaum SL, Terry MB, Neugut AI, Hibshoosh H, Santella RM, Gammon MD. DNA methylation modifies the association between obesity and survival after breast cancer diagnosis. *Breast Cancer Res Treat*. 2016;156: 183-194. PMID:PMC4890602.

12. Niehoff NM, Nichols HB, **White AJ**, Parks CG, D'Aloisio AA, Sandler DP. Childhood and Adolescent Pesticide Exposure and Breast Cancer Risk. *Epidemiology*. 2016;27: 326-333. PMID:PMC4862358.
13. Parada H, Jr., Wolff MS, Engel LS, **White AJ**, Eng SM, Cleveland RJ, Khankari NK, Teitelbaum SL, Neugut AI, Gammon MD. Organochlorine insecticides DDT and chlordane in relation to survival following breast cancer. *Int J Cancer*. 2016;138: 565-575. PMID:PMC4715584.
14. **White AJ**, Bradshaw PT, Herring AH, Teitelbaum SL, Beyea J, Stellman SD, Steck SE, Mordukhovich I, Eng SM, Engel LS, Conway K, Hatch M, Neugut AI, Santella RM, Gammon MD. Exposure to multiple sources of polycyclic aromatic hydrocarbons and breast cancer incidence. *Environ Int*. 2016;89-90: 185-192. PMID:PMC4818720.
15. **White AJ**, Chen J, Teitelbaum SL, McCullough LE, Xu X, Hee Cho Y, Conway K, Beyea J, Stellman SD, Steck SE, Mordukhovich I, Eng SM, Beth Terry M, Engel LS, Hatch M, Neugut AI, Hibshoosh H, Santella RM, Gammon MD. Sources of polycyclic aromatic hydrocarbons are associated with gene-specific promoter methylation in women with breast cancer. *Environ Res*. 2016;145: 93-100. PMID:PMC4706465.
16. **White AJ**, Sandler DP, D'Aloisio AA, Stanczyk F, Whitworth KW, Baird DD, Nichols HB. Antimullerian hormone in relation to tobacco and marijuana use and sources of indoor heating/cooking. *Fertil Steril*. 2016;106: 723-730. PMID:PMC5010988.
17. McCullough LE, Chen J, Cho YH, Khankari NK, Bradshaw PT, **White AJ**, Teitelbaum SL, Terry MB, Neugut AI, Hibshoosh H, Santella RM, Gammon MD. Modification of the association between recreational physical activity and survival after breast cancer by promoter methylation in breast cancer-related genes. *Breast Cancer Res*. 2017;19: 19. PMID:PMC5319077.
18. Nichols HB, Anderson C, **White AJ**, Milne GL, Sandler DP. Oxidative Stress and Breast Cancer Risk in Premenopausal Women. *Epidemiology*. 2017;28: 667-674. PMID:PMC5580344.
19. Niehoff NM, **White AJ**, McCullough LE, Steck SE, Beyea J, Mordukhovich I, Shen J, Neugut AI, Conway K, Santella RM, Gammon MD. Polycyclic aromatic hydrocarbons and postmenopausal breast cancer: An evaluation of effect measure modification by body mass index and weight change. *Environ Res*. 2017;152: 17-25. PMID:PMC5135619.
20. Niehoff NM*, **White AJ**, Sandler DP. Childhood and teenage physical activity and breast cancer risk. *Breast Cancer Res Treat*. 2017;164: 697-705. PMID:PMC5553118.
21. Park YM, **White AJ**, Nichols HB, O'Brien KM, Weinberg CR, Sandler DP. The association between metabolic health, obesity phenotype and the risk of breast cancer. *Int J Cancer*. 2017;140: 2657-2666. PMID:PMC5406245.
22. Shmuel S*, **White AJ**, Sandler DP. Residential exposure to vehicular traffic-related air pollution during childhood and breast cancer risk. *Environ Res*. 2017;159: 257-263. PMID:PMC5718152.
23. **White AJ**, D'Aloisio AA, Nichols HB, DeRoo LA, Sandler DP. Breast cancer and exposure to tobacco smoke during potential windows of susceptibility. *Cancer Causes Control*. 2017;28: 667-675. PMID:PMC5530373.

24. **White AJ**, DeRoo LA, Weinberg CR, Sandler DP. Lifetime Alcohol Intake, Binge Drinking Behaviors, and Breast Cancer Risk. *Am J Epidemiol.* 2017;186: 541-549. PMID:PMC5860148.
25. **White AJ**, Sandler DP. Indoor Wood-Burning Stove and Fireplace Use and Breast Cancer in a Prospective Cohort Study. *Environ Health Perspect.* 2017;125: 077011. PMID:PMC5744698.
26. **White AJ**, Weinberg CR, Park YM, D'Aloisio AA, Vogtman E, Nichols HB, Sandler DP. Sleep characteristics, light at night and breast cancer risk in a prospective cohort. *Int J Cancer.* 2017;9: 30920. PMID:PMC5633507.
27. Benjamin Neelon SE, **White AJ**, Vidal AC, et al. Maternal vitamin D, DNA methylation at imprint regulatory regions and offspring weight at birth, 1 year and 3 years. *International journal of obesity (2005).* Apr 2018;42(4):587-593. PMID:PMC5756131.
28. **White AJ**, O'Brien KM, Jackson BP, Karagas MR. Urine and toenail cadmium levels in pregnant women: A reliability study. *Environ Int.* 2018;118: 86-91. PMID:PMC6045451.
29. Niehoff NM*, Nichols HB, Zhao S, **White AJ**[^], Sandler DP[^]. Adult physical activity and breast cancer risk in women with a family history of breast cancer. *Cancer Epidemiol Biomarkers Prev.* 2019;1:112-119. PMID:PMC6325010.
30. O'Brien KM, **White AJ**, Sandler DP, Jackson BP, Karagas MR, Weinberg CR. Do post-breast cancer diagnosis toenail trace element concentrations reflect prediagnostic concentrations? *Epidemiology.* 2019;1:112-119. PMID:PMC6275107.
31. **White AJ**, O'Brien KM, Niehoff NM, Carroll R, Sandler DP. Metallic air pollutants and breast cancer risk in a nationwide cohort study. *Epidemiology.* 2019;1:20-28. PMID:PMC6269205.
32. O'Brien KM, **White AJ**, Jackson BP, Sandler DP, Karagas MR, Weinberg CR. Toenail-based metal concentrations and young-onset breast cancer. *Am J Epidemiol.* 2019;188(4):646-655. PMID:PMC6454842.
33. Collin LJ, McCullough LE, Conway K, **White AJ**, Xu X, Cho YH, Shantakumar S, Teitelbaum SM, Neugut A, Santella RM, Chen J, Gammon MD. Reproductive characteristics modify the association between global DNA methylation and breast cancer risk in a population-based sample of women. *PLoS ONE.* 2019;14(2):e0210884. PMID:PMC6375664.
34. Wang T, McCullough LE, **White AJ**, Bradshaw PT, Xu X, Terry MB, Teitelbaum SL, Neugut AI, Santella RM, Chen J, Gammon MD. Prediagnosis aspirin use, DNA methylation and mortality after breast cancer: a population-based study. *Cancer.* 2019;125 (21):3836-3844.
35. Wilson LE, Xu Z, Harlid S, **White AJ**, Troester M, Sandler DP, Taylor JA. Alcohol and DNA methylation: an epigenome-wide association study in blood and normal breast tissue. *Am J Epidemiol.* 2019;188(6):1055-1065. PMID:PMC6545285
36. Park YM, **White AJ**, Jackson CL, Weinberg CR, Sandler DP. Prospective study on nocturnal light exposure while sleeping and risk of obesity in women. *JAMA Intern Med.* 2019;179(8):1061-1071. PMID:PMC6563591.

37. **White AJ**, Weinberg CR, O'Meara E, Sandler DP, Sprague BL. Airborne metals and polycyclic aromatic hydrocarbons in relation to mammographic breast density. *Breast Cancer Res*, 2019;21(1):24. PMID:PMC6373138.
38. **White AJ**, Kresovich JK, Xu Z, Sandler DP, Taylor JA. Shift Work, DNA methylation and Epigenetic Age. *Int J Epidemiol*, 2019;48(5):1536-1544. PMID:PMC6857743.
39. Moore AM, Xu Z, Kolli RT, **White AJ**, Sandler DP, Taylor JA. Persistent epigenetic changes in adult daughters of older mothers. *Epigenetics*, 2019. 14(5):467-476. PMID:PMC6557560
40. Niehoff NM, Gammon MD, Keil AP, Nichols HB, Engel LS, Taylor JA, **White AJ**, Sandler DP. Hazardous air pollutants and telomere length in the Sister Study. *Environ Epidemiol*, 2019; 3(4):e053
41. Niehoff NM, Gammon MD, Keil AP, Nichols HB, Engel LS, Sandler DP[^], **White AJ**[^]. Airborne mammary carcinogens and breast cancer risk in the Sister Study. *Environ Int*, 2019;130:104897. PMID:PMC6679994.
42. Murphy JD, Sandler DP, **White AJ**, O'Brien KM. Severe acne and risk of breast cancer. *Breast Cancer Res Treat*. 2019;177(2):487-495. PMID:PMC6771926
43. **White AJ**, Kresovich JK, Keller JP, Xu Z, Kaufman JD, Weinberg CR, Taylor JA, Sandler DP. Air pollution, particulate matter composition and methylation-based biologic age. *Environ Int* 2019;132:105071. PMID:PMC6754788
44. Hosgood HD III, Klugman M, Matsuoka K, **White AJ**....Lan Q. The establishment of the household air pollution consortium (HAPCO). *Atmosphere*, 2019; 10:7
45. **White AJ**, Keller JP, Zhao S, Carroll R, Kaufman JD, Sandler DP. Air pollution, clustering of particulate matter components and breast cancer in the Sister Study: A U.S.-wide cohort. *Environ Health Perspect*, 2019; 127(10):107002. PMID:PMC6867190
46. McCullough LE, Collin LJ, Conway K, **White AJ**, Cho YH, Shantakumar S, Terry MB, Teitelbaum SL, Neugut AI, Santella RM, Chen J, Gammon MD. Reproductive characteristics are associated with gene-specific promoter methylation status in breast cancer. *BMC Cancer*, 2019;19 (1):926. PMID:PMC6749688.
47. Carroll R, **White AJ**, Keil AP, Meeker JD, McElrath TF, Zhao S, Ferguson KK. Latent classes for meaningful chemical mixtures analyses in epidemiology: an example using phthalate and phenol exposure biomarkers in pregnant women. *J Expo Sci Environ Epidemiol*, 2020; 30(1):149-159. PMID:PMC6917962
48. Eberle C*, Sandler DP, Taylor KW, **White AJ**. Hair dye and chemical straightener use and breast cancer risk in a large US population of black and white women. *Int J Cancer*, 2020. *In press*
49. Sweeney MR*, Sandler DP, Niehoff NM, **White AJ**. Shift work and working at night in relation to breast cancer incidence. *Cancer Epid Bio Prev*, 2020. *in press*

Chapters, Proceedings, Invited Reviews and Commentaries

1. **White AJ**, Bradshaw PT, Hamra GB. Air Pollution and Breast Cancer: A Review. Current Epidemiology Reports. 2018: 1-9.

My NCBI bibliography link:

<https://www.ncbi.nlm.nih.gov/sites/myncbi/alexandra.white.2/bibliography/49459194/public/?sort=date&direction=ascending>

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